METHOD AND CIRCUIT FOR ADJUSTING A SELF-REFRESH RATE TO MAINTAIN DYNAMIC DATA AT LOW SUPPLY VOLTAGES

ABSTRACT OF THE DISCLOSURE

A method and circuit for refreshing dynamic data stored in an integrated circuit are disclosed. The integrated circuit receives a supply voltage and operates in a self-refresh mode of operation to refresh the dynamic data at a refresh time that defines how often the dynamic data is refreshed during the self-refresh mode. The method includes monitoring a magnitude of the supply voltage and adjusting the refresh time as a function of the monitored magnitude of the supply voltage. The integrated circuit may be any type of integrated circuit that stores dynamic data, such as a memory device like a dynamic random access memory, DDR DRAM, SLDRAM, or RDRAM, or other type of integrated circuit such as a microprocessor.